37391

DECLARATION FOR RECORD OF DECISION

SITE NAME AND LOCATION

Asbestos Dump - Millington Site
Millington, New Jersey

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Asbestos Dump - Millington Site in Millington, New Jersey, developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Contingency Plan. This decision is based on the administrative record for the site. The attached index identities the items which comprise the administrative record upon which the selection of the remedial action is based.

The State of New Jersey has concurred on the selected remedy.

DESCRIPTION OF THE SELECTED REMEDY

The Asbestos Dump - Millington Site operable unit approach was developed to protect public health and the environment by containing the migration of asbestos and other contaminants presently at the site.

The major components of the selected remedy are as follows:

- installation of a two-foot soil cover on areas of exposed or minimally covered asbestos;
- installation of a chain-link security fence to restrict access to the asbestos mound;
- construction of slope protection/stabilization measures along the asbestos mound embankment;
- construction of surface run-off diversion channels on top of the asbestos mound;
- operation and maintenance,

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- long-term monitoring;
- institutional controls to restrict on-site groundwater usage and limit development on the asbestos fill areas; and
- treatability studies of technologies for permanent destruction or immobilization of asbestos.

DECLARATION OF THE SELECTED REMEDY

Consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, I have determined that the selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to this remedial action and is cost effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. Because treatment of the principal threat from the site was not found to be practicable at the present time, this remedy does not satisfy the statutory preference for treatment as a principal element of the remedy. However, EPA will provide for treatability studies to determine the future applicability of innovative technologies that will result in permanent remediation of asbestos.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Sept. 30, 1988
Date

William J. Muszynski, P. E.
Acting Regional Administrator

RECORD OF DECISION

DECISION SUMMARY

ASBESTOS DUMP - MILLINGTON SITE

SITE NAME, LOCATION AND DESCRIPTION

The subject of this Record of Decision (ROD), the Asbestos Dump-Millington Site, ("Millington Site") is one of four properties comprising the Asbestos Dump Site.

The other three sites, collectively referred to as the satellite sites, will be the subject of a subsequent ROD. They are as follows:

(1) the Dietzman Tract located in the Great Swamp National Wildlife Rufuge in Harding Township, New Jersey;

(2) the property at 257 New Vernon Road in Passaic Township, New Jersey; and,

(3) the property at 651 White Bridge Road also in Passaic Township, New Jersey.

The Millington Site is an 11 acre commercial property located at 50 Division Avenue in Millington, New Jersey (Figure 1). The site is bounded on the west by the Passaic River, on the north by the Millington Train Station, and on the east and south by commercial and private residences, respectively. Currently owned by Tita Ltd., this site was formerly utilized as an asbestos processing plant that was owned by National Gypsum Company ("National Gypsum") and previously, other manufacturers of asbestos products.

The asbestos mound portion of the site lies within the floodplain of the Passaic River. The Passaic River is utilized as a public water supply source. Ten miles downstream from the Millington Site the Commonwealth Water Company has a surface water intake that serves 74,000 people.

The population of Millington is approximately 7800. There are approximately 200 individuals who are employed by twenty-one businesses operating on the active portion of the site, which has been converted to an industrial park by Tifa Ltd.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Manufacturing of asbestos products at the Millington Site began in 1927 by Asbestos, Ltd., which engaged in the fiberization and sale of asbestos until 1946. From 1946 until 1953, the plant was owned by Bernard E. Smith and operated under the name of Smith Asbestos, Inc., a manufacturer of asbestos roofing and siding.

During this latter period, water from the manufacturing process was impounded on the site by dams contructed to permit settling of asbestos fibers suspended in the waste water. Periodically, sediment from the settling ponds was removed, disposed of on-site and then covered with dirt. In May 1953, the property was acquired by National Gypsum, which manufactured cement asbestos siding and roofing sheets at the plant until 1975. During National Gypsum's period of ownership, most of the waste generated from the production processes was recaptured and recycled.

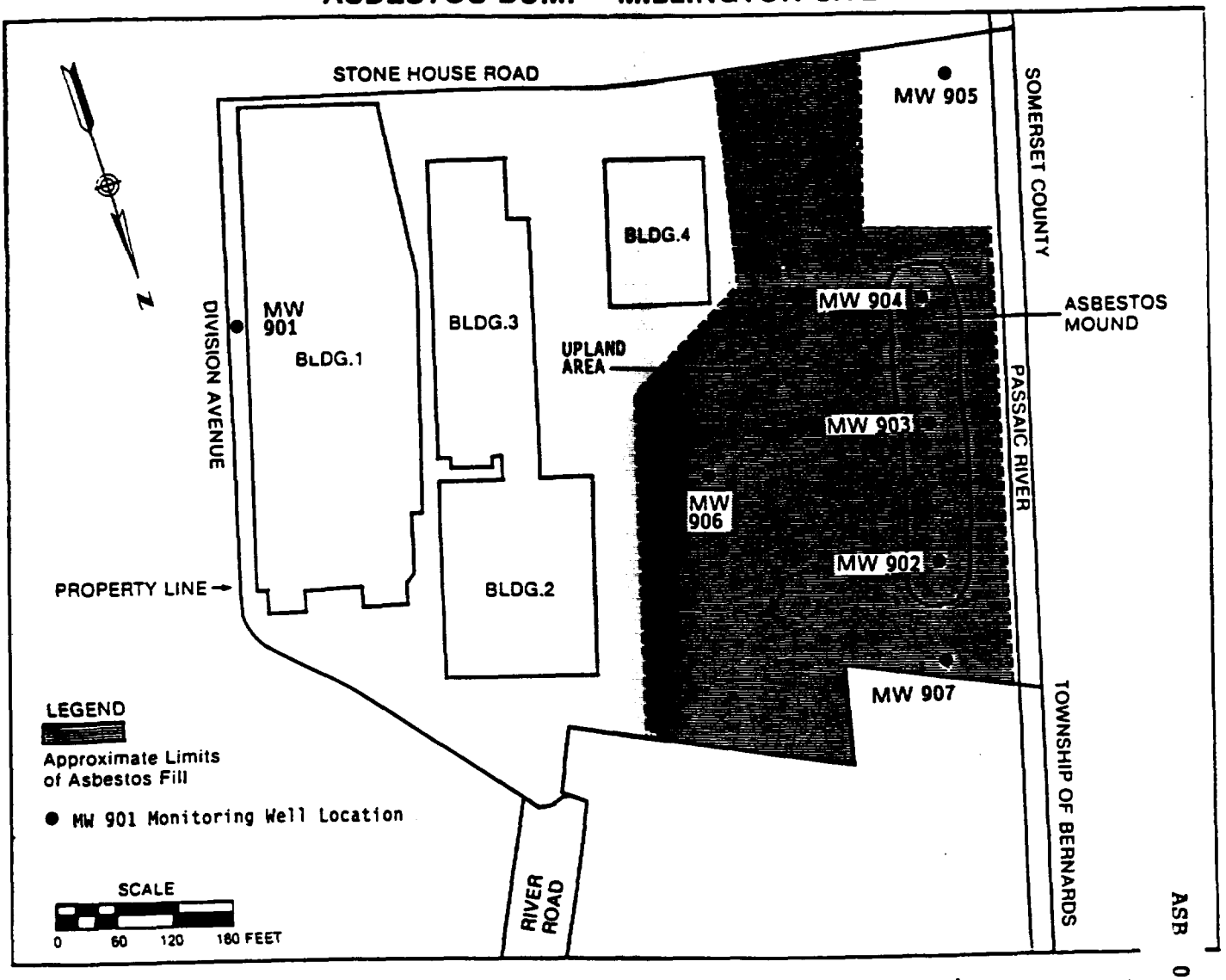
Waste that was not recycled consisted of broken siding and asbestos fibers. These waste products were dumped on a five acre area of the property, (see Figure 1). This included a 330-by-75 foot area (referred to as the asbestos mound) where predominantly asbestos fibers were disposed. After the limited space for on-site dumping reached full capacity, additional wastes were transported off-site.

From 1959 until 1972, National Gypsum used phenylmercuric acetate (PMA) as a fungicide to coat the asbestos shingles. Waste generated by the cleaning of coating equipment was disposed of in small pits west of the plant.

In May 1975, National Gypsum closed the Millington plant. In 1976, ownership of the land was transferred to Tifa Ltd., Tifa Ltd. has since divided the plant into several smaller parcels which have been leased to other manufacturing and service companies.

The Asbestos Dump was proposed for inclusion on EPA's National Priorities List in December, 1982. As part of EPA's enforcement activities, information request letters were mailed in October, 1983 to National Gypsum, as former owner and operator of the facility and to Tifa Ltd., as current owner and operator. National Gypsum responded to the EPA's request for information, acknowledging that it had generated and disposed of asbestos and other waste during its operation at the Millington Site. Tifa Ltd. responded that they did not generate, transport or dispose of any hazardous substances at the Millington site.

FIGURE 1
ASBESTOS DUMP—MILLINGTON SITE



On November 2, 1983, EPA conducted a site visit in preparation for initiation of the Remedial Investigation and Feasibility Studies (RI/FS). A notice letter along with the RI/FS workplan, prepared by EPA, was sent to National Gypsum in September 1984 to offer the company the opportunity to conduct the RI/FS with private funds. National Gypsum subsequently agreed to conduct the RI/FS. The RI/FS workplan that was prepared by EPA was later implemented by National Gypsum.

National Gypsum entered into an Administrative Order on Consent on April 4, 1985 to perform the RI/FS at the Asbestos Dump Site. Field work began in August, 1986 and was completed in November, 1987.

SCOPE AND ROLE OF OPERABLE UNIT

The Asbestos Dump Site was separated into two operable units. The first unit is the Asbestos Dump - Millington Site, and the second operable unit is the Asbestos Dump - Satellite Sites, which include the Dietzman Tract, 257 New Vernon Road and 651 White Bridge Road. This approach was adopted after EPA determined that additional data was needed to fully assess and characterize potential damages to natural resources at the satellite sites, specifically possible impacts to the Great Swamp National Wildlife Refuge.

Therefore, as a separate operable unit, the RI/FS and ROD could be completed for the Millington Site, while the additional data required for the satellite sites is being obtained. A subsequent ROD will address the remedial decision for the satellite sites. The selected remedy in this ROD addresses the asbestos mound and the "upland" portion of the Millington Site, which represent the principal threat of release from the site.

COMMUNITY RELATIONS HISTORY

The Draft RI and Draft FS reports along with the Proposed Remedial Action Plan (PRAP), which identified the EPA's preferred remedial alternative, were released to the public on August 19, 1988. All three documents were placed in the public repository at the Passaic Township Hall. The public comment period was from August 19 until September 9, 1988.

A public meeting was held on August 29, 1988 at the Passaic Township Hall to present the RI/FS, and EPA's proposed remedy and to solicit public input. The issues raised during the comment period are addressed in the Responsiveness Summary Section of this document.

An earlier public meeting was held on August 20, 1986 at the Passaic Township Hall. The purpose of that meeting was to explain the scope of the activities that were to take place as outlined in the RI/FS workplan.

SUMMARY OF SITE CHARACTERISTICS

Remedial investigation field activities to determine site characterisitics, the full nature and extent of contamination and potential pathways of contaminant migration were performed during the period August 1986 through November 1987.

The primary contaminant of concern detected at the Millington site was asbestos. Asbestos was found in the form of broken asbestos tiles, sidings and fibers. The quantity of asbestos waste on-site is estimated to be 90,000 cubic yards. Soil borings and historical information revealed that the "upland" portion of site contains broken asbestos tiles and siding, while the asbestos mound was found to contain predominantly asbestos fibers. The "upland" and asbestos mound portions of the site are covered with 4 to 6 feet and 2 to 4 feet of topsoil, respectively. However, exposed areas of asbestos fibers were observed on the slope of the asbestos mound adjacent to the Passaic River. The asbestos mound is heavily vegetated with thick underbrush and deciduous trees. On-site ambient air monitoring did not detect significant concentrations of airborne asbestos.

Extensive slope stability analyses indicated that the asbestos mound was relatively stable and not in imminent danger of collapse. However, the slope remains unprotected from surface erosion and the potential destabilizing effects of flooding along the Passaic River.

Soils analysis from on-site soil borings revealed elevated levels of mercury and nickel. The mercury appears to be related to PMA which was applied to asbestos siding and shingles as a fungicide.

Analyses of 3 rounds of groundwater samples from 7 on-site monitoring wells revealed low concentrations of mercury and asbestos related to disposal activities at the site. Mercury was detected in concentrations exceeding drinking water standards, 2 parts per billion (ppb), in 4 of 21 samples. The highest concentration of mercury detected in the groundwater was 4.8 ppb. Asbestos was detected at concentrations ranging from 58,000 to 142,000 fibers/liter, substantially below the proposed EPA drinking water standard of 7,100,000 fibers/liter.

Three rounds of surface water sampling were conducted. EPA's Ambient Water Quality Criteria (AWQC) for asbestos (30,000 fibers/liter) was exceeded in 3 of 12 samples. However, two of the these samples were obtained from upstream sampling stations, which may indicate the presence of other sources of asbestos. Cadmium was detected in excess of the AWQC (10 ppb), at one downstream location, at 563 ppb. However, the presence of cadmium in the surface water is not likely to be attributable to the Millington Site. Nickel was found in excess of the AWQC (13.4 ppb) in two downstream locations in the initial round of sampling, at 47 and 84 ppb, and was not detected in the two subsequent sampling events. Nickel was detected in on-site soils and groundwater and may be attributable to the Millington Site.

TABLE - 1

AMBIENT ASBESTOS AIR SAMPLING RESULTS AND WEATHER DATA

MILLINGTON SITE

	Location	Fibers/cc	NIOSH * Guideline Fibers/cc	Wind Speed
Event 1				
	DW	<.004	0.1	8-10 mph
	DW	<.004		8-10 mph
	OS	<.004		8-10 mph
	UW	<.004		8-10 mph
	OS	.004		8-10 mph
Event 2	DW	<.004		3-5 mph
	DW	<.004		3-5 mph
	DW	<.004		3-5 mph
	OS	<.004		3-5 mph
	UW	<.004		3-5 mph

DW - Down wind
UW - Up wind
OS - On site
mph - miles per hour

* National Institute for Occupational Safety and Health recommended 8-hour exposure limit.

TABLE - 2

COMPARISON OF SUBSURFACE SOIL SAMPLES IN THE ASBESTOS MOUND AND UPLAND AREAS TO NJDEP ECRA GUIDELINES FOR CONTAMINATED SOILS

Parameter	Sample Range (mg/kg)	ECRA Guideline (mg/kg)	No. of samples exceeding guidelines
Detected Indicator Chemicals			
Arsenic	2.3 - 6.0	20.0	0 of 13
Mercury	0.1 - 7.8	1.0	4 of 13
Nickel	13.4 - 301.0	100.0	7 of 13
Benzene	ND - 0.02	---	
Trichloroethylene	ND - 0.08	---	
Other Detected Chemicals			
Chromium	14.8 - 83.3	100.0	0 of 13
Copper	12.5 - 68.2	170.0	0 of 13
Lead	6.2 - 39.4	100.0	0 of 13
Zinc	17.5 - 309.0	350.0	0 of 13
Phenols	0.05 - 0.06	---	
Total Volatile Organics	0.14 - 0.35	1.0	0 of 13

Notes:

ND - None Detected
--- No Guideline

TABLE - 3

COMPARISON OF SURFACE SOIL SAMPLES IN UPLAND AREAS TO TO NJDEP ECRA GUIDELINES FOR CONTAMINATED SOILS

Parameter	Sample Range (mg/kg)	ECRA Guideline (mg/kg)	No. of samples exceeding guidelines
Detected Indicator Chemicals			
Arsenic	ND - 7.4	20.0	0 of 2
Mercury	0.2 - 1.7	1.0	1 of 2
Nickel	35.6 - 51.5	100.0	0 of 2
Bis(2-ethylhexyl)phthalate	ND - 0.62	---	
Other Detected Chemicals			
Chromium	25.4 - 30.6	100.0	0 of 2
Copper	37.3 - 59.0	170.0	0 of 2
Lead	79.7 - 88.1	100.0	0 of 2
Zinc	82.1 - 82.7	350.0	0 of 2
Total Volatile Organics	ND - 0.03	1.0	0 of 2
Total Base/Neutral Extractables	8.02 - 9.63	10.0	0 of 2

Notes:

ND - None Detected
--- No Guideline

TABLE - 4

COMPARISON OF GROUNDWATER SAMPLES TO POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND "TO BE CONSIDERED"(TBC) GUIDELINES

Parameter	Sample Range (mg/l)	ARAR/TBC Level (mg/l)	Source	No. of sample: exceeding ARA
Detected Indicator Chemicals				
Arsenic	ND - 0.004	0.05	SDWA-MCL (1)	0 of 21
Mercury	0.0002 - 0.0048	0.002	SDWA-MCL	4 of 21
Nickel	0.021 - 0.142	0.700	RFD (2)	0 of 21
Bis(2-ethylhexyl) phthalate	0.021 - 0.142	0.700	RFD	0 of 21
Benzene	ND - 0.50	0.005	SDWA-MCL	1 of 21
Trichloroethylene	0.002 - 0.006	0.005	SDWA-MCL	1 of 21
Asbestos	58,000 - 142,000 (fibers/liter)	7,100,000 (fibers/liter)	Proposed MCLG (3)	0 of 21
Other Detected Chemicals				
Chromium	0.005 - 0.023	0.05	SDWA-MCL	0 of 21
Copper	0.008 - 0.386	1.295	IRIS (4)	0 of 21
Lead	0.012 - 0.020	0.05	SDWA-MCL	0 of 21
Silver	0.010 - 0.024	0.05	SDWA-MCL	0 of 21
Zinc	0.012 - 0.158	7.35	IRIS	0 of 21
Acetone	0.012 - 0.067	3.50	RFD	0 of 21
Ethylbenzene	ND - 0.021	3.50	IRIS	0 of 21
Trans-1,2-dichloroethene	ND - 0.006	NA (5)		
Xylenes	ND - 0.009	70.0	RFD-IRIS	0 of 21
Di-n-butyl-phthalate	ND - 0.001	NA		
Naphthalene	ND - 0.026	3.50	RFD	0 of 21
Endrin	ND - 2.6E-05	0.0002	SDWA-MCL	0 of 21
Phenols	0.015 - 0.048	1.40	IRIS	0 of 21

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Notes:

(1) Safe Drinking Water Act- Maximum Contaminant Levels (SDWA-MCL)

(2) No established MCLs. Guideline is based on the Reference Dose Value (RFD) for chronic acceptable intake (oral route) as developed by USEPA (IRIS, 1988 and the Superfund Public Health Evaluation Manual Update)

(3) Safe Drinking Water Act- Maximum Contaminant Level Goal (MCLG)

(4) Integrated Risk Information System, USEPA, 1988 (IRIS)

(5) No Standard Available

ND - None Detected

TABLE - 5

COMPARISON OF SEDIMENT SAMPLES TO NJDEP ECRA GUIDELINES FOR CONTAMINATED SOILS

Parameter	Sample Range (mg/kg)	ECRA Guideline (mg/kg)	No. of samples exceeding guidelines
Detected Indicator Chemicals			
Arsenic	ND - 10.9	20.0	0 of 2
Mercury	ND - 0.4	1.0	0 of 2
Nickel	28.8 - 32.1	100.0	0 of 2
Other Detected Chemicals			
Chromium	25.6 - 29.2	100.0	0 of 2
Copper	29.0 - 67.2	170.0	0 of 2
Lead	33.2 - 62.0	100.0	0 of 2
Zinc	108.0 - 181.0	350.0	0 of 2
Total Volatile Organics	0.012 - 0.015	1.0	0 of 2
Total Base/Neutral Extractables	ND - 6.6	10.0	0 of 2

ND - None Detected

TABLE - 6

COMPARISON OF SURFACE WATER SAMPLES TO AMBIENT WATER QUALITY CRITERIA (AWQC) FOR CONSUMPTION OF AQUATIC ORGANISMS AND DRINKING WATER

Parameters	Sample Range (mg/l)	AWQC (mg/l)	No. of samples exceeding guidel
Detected Indicator Chemicals			
Cadmium	ND - 0.563	0.010	1 of 12
Nickel	0.047 - 0.084	0.0134	2 of 12
Bis(2-ethylhexyl) phthalate	ND - 0.110	15.00	0 of 12
Asbestos	67,200 - 100,000 (fibers/liter)	30,000 (fibers/liter)	3 of 12
Other Detected Chemicals			
Chromium	0.005 - 0.020	0.050 (Cr^{+6})	0 of 12
Copper	0.008 - 0.014	1.00	0 of 12
Lead	0.002 - 0.018	0.050	0 of 12
Selenium	ND - 0.020	0.010	1 of 12
Silver	ND - 0.013	0.050	0 of 12
Zinc	0.011 - 0.060	5.00	0 of 12
Di-n-butyl-phthalate	ND - 0.013	34.0	0 of 12
Phenols	ND - 0.042	3.5	0 of 12

ND - None Detected

SUMMARY OF SITE RISKS

The objective of the risk assessment is to define the nature and extent of potential public health and environmental risk associated with the presence of hazardous substances at and around the Millington Site. In assessing risk, the following are considered: contaminants having known chemical and biological toxicity, actual or potential exposure pathways, and human and environmental receptors.

The following chemicals were chosen as indicator chemicals:[1]

(1) asbestos
(2) mercury
(3) arsenic
(4) nickel
(5) cadmium
(6) bis(2-ethylhexyl) phthalate
(7) benzene
(8) trichloroethylene (TCE)

Asbestos and mercury were determined to be the principal contaminants of concern, based upon detection at a higher frequency or a higher concentration level within each selected medium. The exposure pathways by which the chemicals of concern may come into contact with humans or migrate into the environment were evaluated. Several potential exposure routes were identified and include:

(1) soil/asbestos
(2) surface water
(3) ground water and
(4) air

The risks associated with the potential exposure routes are discussed below.

Soil/Asbestos

The potential risk from direct contact with soil is primarily due to the presence of asbestos. The risk from dermal contact with on-site surface soils is mitigated by the topsoil layer over the soil/asbestos fill which prevents direct contact. Under present conditions, the site is not posing a significant risk via subsurface soil, because receptors cannot come in direct contact with these soils.

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1. Indicator chemicals for the Site were chosen using the procedures described in the Superfund Public Health Evaluation Manual (USEPA 1986). This ranking scheme incorporates information on each constituent chemical's toxicity, concentration, environmental persistence and mobility, in order to select those constituent chemicals predicted to have the greatest impact on human health or the environment.

Surface Water

Based on surface water data, the Millington Site does not present a significant risk to public health and the environment via the surface water route. Although nickel exceeded the Ambient Water Quality Criteria in the first round of sampling, the endangerment assessment conducted for the site did not reveal a significant risk to public health from direct contact and consumption of surface water or ingestion of fish.

Groundwater

The groundwater within the asbestos mound contained contamination slightly above MCL or recommended MCL levels. However, the contaminants detected were confined to the site and are not expected to impact public health and the environment. Groundwater from the site migrates directly into the Passaic River, which has not been adversely impacted by groundwater discharges from the site. In addition, the community is served by a public water supply system and there are no downgradient potable wells within the vicinity of the site.

Air

Employees working on site are the primary potential receptors of possible release through the air route. However, the asbestos mound area is removed from the workplace. Furthermore, on-site ambient air monitoring has not shown concentrations of asbestos which constitute a health threat (See Table 1). With no signiticant changes in site conditions, the site should not present a risk to public health through airborne releases of asbestos. However, natural processes such as erosion of the existing soil and vegetative cover would increase the potential for exposure of asbestos to the atmosphere and result in future unacceptable risks.

Tables 2 through 6 provide the ranges of concentrations found in each medium and compare them to their respective potentially Applicable or Relevant and Appropriate Requirements (ARARs) and other guidelines or criteria to be considered.

Description of Remedial Alternatives

This section describes the remedial alternatives that were identified and assembled using suitable technologies in order to meet the objectives of the National Oil and Hazardous Substances Contingency Plan (NCP). These alternatives were developed by screening a wide range of technologies for their applicability to site-specific conditions and then evaluated in terms of the nine evaluation criteria based on the statutory requirements of CERCLA/SARA.

Source Control Alternatives;

Alternative Source Control - 1 (SC-1) - No Action with Long-term Monitoring

The no-action alternative provides a baseline for comparison of other alternatives. Under the no-action alternative, no remedial measures would be undertaken at the Asbestos Dump - Millington Site. However, a comprehensive sampling program would be implemented to monitor the potential for future migration of contaminants and to identify a point at which further remedial activities may be required. The monitoring program would include air, sediment, groundwater and surface water sampling for a minimum of 30 years.

This alternative neither reduces the potential for future airborne release of asbestos from exposed areas, nor does it limit access to the site. Furthermore, it does not reduce surface erosion and/or the potential for migration of asbestos to the Passaic River. The estimated cost of alternative SC-1 is $1,925,000. This includes total capital cost and present worth operations and maintenance costs. The high cost of the no-action alternative is due to the comprehensive nature of the long term monitoring program.

Alternative SC -2/3 Completion of Soil Cover/Site Security/Slope Protection/Erosion & Sediment Control/Monitoring/Treatability Studies

Alternative SC-2/3 provides for installation of a two foot soil cover on areas of exposed or minimally covered asbestos, consistent with the National Emission Standards for Hazardous Air Pollutants (NESHAPs) requirements of the Clean Air Act. Existing soil cover, dense underbrush and deciduous trees will remain intact where this cover has been determined to be a minimum of 2 feet. Newly covered areas would be vegetated to minimize erosion. A retaining wall, a pre-cast concrete mat or an equivalent system would be constructed to protect the asbestos mound along the Passaic River from flood events and surface erosion and to provide additional structural support. In addition, erosion and sediment controls would be installed to reduce surface run-off and control erosion of the embankment slope. A security fence would be installed to restrict access to the asbestos mound area. Institutional controls would be implemented to restrict on-site groundwater usage and limit development in areas of known or suspected asbestos disposal.

This alternative would restrict site access, reduce the potential for future airborne release of asbestos from exposed areas, control future surface erosion, provide slope stability and mitigate the transport of asbestos to the Passaic River. Upon completion of this remedy, there would be long-term monitoring and maintenance of the site. In addition, treatability studies would be conducted to determine if asbestos can be permanently remediated. The cost of alternative SC-2/3 is estimated between $1,800,000 and $2,111,000.

Alternative SC-4: Surface Regrading/Cover/Monitoring

This alternative involves clearing and grubbing of existing vegetation on the asbestos mound and redistributing the asbestos fill as necessary to provide a final slope of 3 Horizontal: 1 Vertical (3H:1V) which would provide for greater slope stability and minimize erosion. A two-foot soil cover would be installed and vegetated to control erosion of the embankment. A chain-link security fence would be installed to restrict access to the asbestos mound. Erosion and sediment controls as described in Alternative SC-2/3, as well as long-term monitoring, would also be implemented. This alternative would minimize future potential risks from releases of airborne asbestos by minimizing future surface erosion and long-term failure of the mound. Furthermore, flood control and slope stabilization measures would not be as protective as those planned in Alternative SC-2/3. The cost of Alternative SC-4 is estimated at $3,463,000.

Alternative SC - 5 - Excavation/Offsite Disposal

This alternative would provide for source removal which includes the excavation of 90,000 cubic yards of asbestos waste using control measures such as silt fences, wetting, and berms to minimize erosion and potential airborne releases of asbestos during excavation. The excavated asbestos would be containerized in bulk and transported to an off-site disposal facility in accordance with NESHAPs and other Federal and State requirements. Clean soil would be used for regrading, followed by the vegetation of all disturbed areas. Air, soil and groundwater sampling would be conducted to verify the effectiveness of the remedial action. This alternative would require 150-200 working days for excavating and containerizing the asbestos in bulk. The estimated cost for alternative SC-5 remedy is $22,172,000.

Groundwater Alternatives:

As documented in the Summary of Site Risks section of this document, the groundwater contamination at the Site does not pose a significant risk to public health and environment. Therefore, groundwater alternatives will not be addressed in this document.

TABLE - 7

ALTERNATIVE COST COMPARISON

Alternative		Capital Cost ($1,000)	Annual O&M ($1,000)	Present Worth @ 8% Discount Rate ($1,000s) 30 years	Total Costs ($1,000)
SC-1	No Action	0	171	1925	1925
SC-2/3	Completion of Soil Cover/Site Security/Slope Protection/ Erosion & Sediment Control/ Monitoring/Treatability Studies	679-966	56-161	1145	1824-2111
SC-4	Surface Regrading/ Cover	2345	53-161	1118	3463
SC-5	Excavation/ Off-site Disposal	21726	45-81	446	22172

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The alternatives were evaluated based on the following nine criteria:

- Overall protection of human health and the environment;
- Compliance with federal and state Applicable or Relevant and Appropriate Requirements (ARARs);
- Reduction of toxicity, mobility or volume;
- Short-term effectiveness;
- Long-term effectiveness;
- Implementability;
- Cost;
- Community Acceptance; and
- State Acceptance.

Table 8 presents a matrix in which all nine criteria can be compared for each alternative. Table 8 also highlights the advantages and disadvantages of each alternative with respect to the evaluation criteria, thereby providing the rationale for the selected remedy.

TABLE 8
SUMMARY OF DETAILED EVALUATION OF ALTERNATIVES
SOURCE CONTROL ALTERNATIVES

Assessment Factors	SC-1 No Action	SC-2/3 Completion of Soil Cover/Erosion/Site Security/Slope Protection/& Sediment Control/ Monitoring/Treatability Studies
Overall protection of Human Health & Environment	Does not minimize potential for future release of asbestos into the environment. Does not limit site access and potential direct contact threat.	Mitigate risks associated with exposure to contaminated soils and airborne asbestos. Prevents migration of asbestos to surface water.
Compliance with ARARs	Does not comply with ARARs.	Compliance with all ARARs.
Long-Term Effectiveness and Permanence	No direct engineering controls to prevent future release. Residual contamination and source of asbestos remains.	Provides for increased structural stability of asbestos mound and long-term protection against flooding. Technologies are proven with long-term reliability. Although residuals remain on-site, the potential for exposure and migration is limited. Treatability studies to ensure that permanent solutions employed to maximum extent practicable.
Short-Term Effectiveness	No reduction in the potential for airborne and surface water release or direct contact.	Reduces potential for direct contact within several weeks of implementation. Prevents migration to surface water and airborne transport of asbestos within several weeks of implementation.
Reduction of Toxicity Mobility/Volume	No reduction of mobility, toxicity, or volume since no treatment employed.	Reduces mobility of asbestos through air and surface water especially during flood events. No reduction of toxicity or volume.
Implementability	No technical restraints to implementation.	Services and materials available, some specialists required for construction and startup. Cofferdam may be needed to divert stream during construction. Technical requirements for stream encroachment or relocation permits need to be met.
Cost	Capital Cost 0 Annual O&M $ 171,000 Present Worth O&M - $1,925,000 Total Cost - $1,925,000	Capital Cost $ 679,000 - 966,000 Annual O&M $ 56,000 to $161,000 Present Worth O&M - $1,145,000 Total Cost $1,824,000 - 2,111,000
State Acceptance	Not acceptable	State has concurred with remedy
Community Acceptance	Not acceptable	Community agrees with remedy

TABLE 8 (continued)

SUMMARY OF DETAILED EVALUATION OF ALTERNATIVES

SOURCE CONTROL ALTERNATIVES

Assessment Factors	SC-4 Surface Regarding/Cover/Site Security/ Monitoring	SC-5 Excavation/Off-Site Disposal
Overall protection of Human Health and Environment	Mitigates risks associated with exposure to contaminated soils and airborne asbestos. Controls migration of asbestos to surface water by reduction of slope angle.	Removal will eliminate long-term erosion and transport of asbestos to surface water and provide protection for public health and environment in the long-term.
Compliance with ARARs	Air, surface water standards may be exceeded in short-term but should be met in the long-term.	Air, surface water standards may be exceeded in short-term but should be met in the long-term.
Short-Term Effectiveness	Implementation time less than complete excavation and off-site removal. Movement of asbestos during construction and regrading operation increases the potential for airborne asbestos.	Excavation and transportation of such a large volume of asbestos waste involves a significant threat of release during construction even with mitigative measures designed to reduce the likelihood of such exposures. Requires 150-200 working days for excavation and bulk containerization of 90,000 cubic yards of asbestos.
Long-Term Effectiveness and Permanence	Reduces existing slope angle and minimizes long-term erosion and transport of asbestos to air and surface water. Requires greater O & M to maintain integrity of slope. Does not provide maximum level of protection against flood damage.	Removes source and eliminates associated long-term risks.
Reduction of Toxicity Mobility/Volume	Cover will reduce mobility of asbestos to air and soil contaminants to groundwater. No reduction in toxicity or volume.	No reduction in toxicity and volume of waste. Off-site disposal without treatment is generally the least preferred alternative.
Implementability	Surface regrading is easily implemented. May require on-site or off-site disposal of excavated materials to maintain proper slope. Mitigative measures required to reduce potential for release of asbestos during contruction.	Implementation requires costly mitigative measures such as silt fences, wetting and berms to minimize erosion and airborne release of asbestos during excavation. Implementation time is variable depending on removal methodology and availability off-site disposal location.
Cost	Capital Cost - $2,345,000 Annual O&M - $ 53,000 to $161,000 Present Worth O&M - $1,118,000 Total Cost - $3,463,000	Capital Cost - $21,726,000 Annual O&M - $ 45,000 to $81,000 Present Worth O&M - $ 446,000 Total Cost - $22,172,000
State Acceptance	State acceptance unlikely	State acceptance unlikely
Community Acceptance	Community acceptance unlikely	Community acceptance unlikely

SELECTED REMEDY

After a complete review and evaluation of the remedial alternatives, EPA has selected Alternative SC-2/3 as the remedy for the Millington Site. This alternative will protect public health and the environment by containing asbestos, which is the major contaminant of concern, and provide for long-term monitoring of other contaminants detected in the asbestos mound.

The preferred remedy is comprised of:

- installation of a two-foot soil cover on areas of exposed or minimally covered asbestos;
- installation of a chain-link security fence to restrict access to the asbestos mound;
- construction of slope protection/stabilization measures along the asbestos mound embankment;
- construction of surface run-off diversion channels on top of the asbestos mound;
- operation and maintenance,
- long-term monitoring;
- institutional controls to restrict on-site groundwater usage and limit development on the asbestos fill areas; and
- treatability studies of technologies for permanent destruction or immobilization of asbestos.

In accordance with NESHAPs, which apply to inactive asbestos waste disposal sites, a minimum of 2 feet of soil cover will be placed on areas of exposed or minimally covered asbestos. Since the existing soil cover is an acceptable cover material for asbestos, it needs only to be supplemented in areas where asbestos is exposed or where soil cover is less than two-feet. Excavation and replacement of the existing soil cover would create significant short-term risks without any benefit to human health and the environment. A chain-link security fence, complete with warning signs will be installed to restrict access to the asbestos mound.

The slope protection/stabilization measures to be built at the base of the mound along the Passaic River will protect the mound from flooding and possible failure, which would result in the release of asbestos to the Passaic River and the air. The types of slope protection/stabilization measures which may be utilized include a retaining wall, a pre-cast concrete mat or an equivalent system. The specific measures will be refined during the remedial design phase.

Surface run-off diversion channels will be constructed at the top of the asbestos mound. These channels will divert surface runoff to the Passaic River, as opposed to over the mound, which could lead to further erosion and release of asbestos into the Passaic River.

To ensure that the remedy maintains its integrity and the site does not present any future threat to the public health and/or the environment, a long-term maintenance and monitoring program will be implemented at the site for a minimum of 30 years. Institutional controls will be utilized to restrict future on-site groundwater usage and limit development on the asbestos till area. The long term monitoring program would include off-site groundwater monitoring wells to ensure protection of public health should there be future use of off-site groundwater within the influence of the site. The Town of Millington and the surrounding townships are served by public water supply systems.

EPA remains concerned about the extremely persistent nature of asbestos. Therefore, the selected remedy will include a program providing for treatability studies to evaluate innovative treatment technologies that may be effective in permanently remediating asbestos. Upon completion of the treatability studies EPA will evaluate their applicability to the site and may select such a technology in a future Record of Decision.

STATUTORY DETERMINATIONS

Protection of Human Health and the Environment

The selected remedy is protective of human health and the environment. By covering and maintaining areas having less than two feet of soil cover, the risk of asbestos fibers becoming airborne will be eliminated. The slope protection measures to be implemented will stabilize and contain the asbestos mound and mitigate the risks of surface water transport of asbestos. No groundwater threat is posed by the site, as the community is served by a public water supply and the low level contamination detected within the asbestos mound should meet health based levels beyond the site boundary. As an added precaution, potential risks related to future off-site use of groundwater will be further mitigated by the implementation of an off-site groundwater monitoring program.

Consistency With Other Laws

During development of the feasibility study, potentially Applicable or Relevant and Appropriate Requirements (ARARs) were established based on current EPA guidance.

There are several types of ARARs that Superfund actions may need to comply with. The classifications of ARARs are presented below:

Chemical-specific requirements are health or risk based concentration limits or ranges in various environmental media for specific hazardous substances, pollutants or contaminants. The chemcial-specific requirements for the site are summarized in Tables 4 and 6. The remedy, through containment of asbestos waste, is expected to comply with Federal and State chemical-specific ARARs.

Location-specific requirements are restrictions on activities occurring on site or in the immediate vicinity of the site. Location-specific ARARs pertinent to the Asbestos Dump - Millington site include the National Historic Preservation Act, the Wild and Scenic Rivers Act and Executive Order 11988 and 11990. The substantive requirements of location-specific ARARs will be met during the remedial design phase. Accordingly, implementation of selected remedy will be in compliance with the above-referenced ARARs.

Action-specific requirements set controls or restrictions on particular kinds of activities related to management of hazardous substances, pollutants or contaminants. Action-specific requirements pursuant to the following Federal and State regulations governing air emissions will be met during the remedial design phase.

- 40 CFR Part 50: National Ambient Air Quality Standards
- NJAC 7:27-13: New Jersey Ambient Air Standards
- 40 CFR Part 61: National Emission Standards for Hazardous Air Pollutants

The remedy complies with the technical requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for inactive asbestos waste disposal sites. Areas of asbestos waste disposal will be covered with a minimum of two feet of compacted nonasbestos-containing material (i.e., soil), and maintained to prevent exposure of the asbestos waste. In addition, the area of the asbestos mound will be fenced and posted with warning signs.

Cost Effectiveness

The EPA feels that the selected remedy is cost effective when compared with the other currently feasible alternatives. The No Action alternative (SC-1) does not mitigate the release of hazardous substances from the site, yet its total cost is similar to the selected alternative (SC 2/3). This is due to the comprehensive nature of the long term monitoring program associated with the No Action alternative. In comparison to alternative-SC 2/3, alternative SC-4 is more costly and less protective in terms of the slope protection/stabilization measures to be implemented. Finally, alternative SC-5 is far more costly than the selected alternative and is not as protective due to the significant short term risks involved in implementing the remedy.

Utilization of Permanent Solution to Maximum Extent Practicable

The Agency believes that Alternative SC-2/3 is the most appropriate remedy to be implemented at this site. The No-Action alternative (SC-1) was rejected because it does not reduce or mitigate the potential for future release of asbestos at the site. Alternative SC-4 and SC-5 were not selected primarily because the potential for a significant release of asbestos to the air and surface water during implementation. The selected alternative is cost-effective and protective of human health and the environment without involving the implementation risks of Alternatives SC-4 and SC-5. Treatment based remedies, although desirable, were not selected at this time because current treatment technologies were not shown to be feasible for a project of this scale. However, treatability studies to determine the feasibility of a more permanent asbestos remedy will ensure permanent solutions are utilized to the maximum extent practicable.

Preference for Treatment

Treatment of the principal threat from the site was not found to be practicable at the present time. Accordingly, the remedy does not satisfy the statutory preference for treatment as a principle element of the remedy. However, the remedy does provide for treatability studies to determine the future applicability of technologies that would satisfy the statutory preference for treatment.

APPENDIX A

ASBESTOS DUMP-MILLINGTON SITE
MILLINGTON
MORRIS COUNTY, NEW JERSEY

FINAL RESPONSIVENESS SUMMARY

The U.S. Environmental Protection Agency (EPA) held a public comment period from August 19, 1988 through September 9, 1988 for interested parties to comment on the draft Remedial Investigation/Feasibility Study (RI/FS) and Proposed Remedial Action Plan (PRAP) for the Asbestos Dump-Millington Superfund site in Millington, Morris County, New Jersey. The Asbestos Dump-Millington site RI/FS encompasses only one of several areas of the Asbestos Dump site. Three "satellite sites" will require additional investigatory work to fully evaluate effective remedial options and impacts on natural resources.

EPA held a public meeting on August 29, 1988 at the Passaic Township Hall, Millington, New Jersey to describe the remedial alternatives and present EPA's preferred remedial alternative for the Asbestos Dump-Millington site.

A responsiveness summary is required for the purpose of providing EPA and the public with a summary of citizens' comments and concerns about the site, as raised during the public comment period, and EPA's responses to those concerns. All comments summarized in this document will be factored into EPA's final decision for selection of the remedial alternative for cleanup of the Asbestos Dump-Millington site.

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS. This section provides a brief history of community interest and concerns regarding the Asbestos Dump-Millington site.

II. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS. This section summarizes comments submitted to EPA at the public meeting and during the public comment period, and provides EPA's responses to these comments.

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

The Asbestos Dump-Millington site has not generated a high level of community interest throughout the RI/FS process. The site first received public attention in 1980 when a former asbestos plant employee identified three off-site areas where asbestos waste material had been dumped. This was followed by a report from a state-wide public interest group on potential asbestos pollution problems caused by the four dump sites. Also, a regional coalition to protect the Passaic River expressed

concern that asbestos waste material from the Asbestos Dump-Millington site was washing into the Passaic River during flood conditions. An additional concern expressed by members of the community was the potential threat to public health that could occur from the inhalation of airborne asbestos particles.

II. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS

Comments raised during the public comment period for the Asbestos Dump-Millington site are summarized below. The public comment period was held from August 19, 1988 through September 9, 1988 to receive comments from the public on the draft RI/FS reports and the PRAP. Comments received during the public comment period are summarized below and organized into the following categories:

A. Site contamination,

B. Responsibility for site remediation,

C. Other remedial alternatives, and

D. Miscellaneous.

Written comments submitted to EPA during the public comment period, along with EPA's responses to those comments are attached as Appendix A.

A. SITE CONTAMINATION

1. Comment: A citizen noted that the Passaic River is a drinking water source, and asked if any volatile organic compounds (VOCs) had been detected during the RI sampling of the river.

   EPA Response: Low levels of VOCs were detected in the asbestos fill area, however, even though groundwater in the fill area flows toward the river, the RI sampling did not reveal the presence of site-related VOCs in the Passaic River.

2. Comment: A citizen asked whether EPA would continue to monitor the Passaic River for site-related contaminants.

   EPA Response: Continued sampling of the site and related areas is part of the long-term monitoring program that EPA has included as a component of the proposed remedial action. EPA plans to install additional groundwater monitoring wells and will continue surface water sampling of the Passaic River.

3. **Comment:** A citizen asked for further information on what levels, if any, of PMA and mercury were detected in the asbestos mound.

EPA Response: EPA received reports from former employees of past owners of the site that sludge containing PMA was disposed in pits in the asbestos mound area. EPA targeted the RI to try and locate the pits, however, it appears that the PMA disposal was not of the magnitude that would allow for accurate definition of the pits. Low levels of mercury were detected throughout the asbestos fill area. Although mercury was detected in groundwater samples, there is no evidence of mercury migrating into the Passaic River. The groundwater in the area is not utilized as a public drinking water supply and, at this time, EPA is not proposing any groundwater remediation.

4. **Comment:** A resident asked how frequently EPA would conduct groundwater sampling during the proposed monitoring program.

EPA Response: EPA is planning on conducting quarterly tests for the first five years. The test results will determine the frequency of the sampling program after that point.

5. **Comment:** Several residents asked who would actually be conducting the future site monitoring. They expressed concerns over the ability of the potentially responsible parties (PRPs) to conduct as thorough a monitoring program as EPA or an independent party.

EPA Response: EPA has maintained oversight and control on the site investigation and will continue to maintain stringent oversight guidelines regarding remedial actions at the site if the PRPs conduct the remediation. EPA and the PRPs would continue to split any samples taken and have the samples analyzed by separate laboratories to ensure the consistency of results.

B. RESPONSIBILITY FOR SITE REMEDIATION

1. **Comment:** A resident wanted to know which company was considered the responsible party for the Asbestos Dump-Millington site.

EPA Response: At this point in time, National Gypsum Company has been identified as a viable responsible party and has accepted EPA's offer to conduct the RI/FS at the site.

2. **Comment:** A resident asked what steps EPA would be taking tc establish who would assume responsibility for the legal and financial components of the upcoming remedial activities.

EPA Response: After EPA signs a Record of Decision (ROD) selecting a remedial alternative for the site, the agency will negotiate with National Gypsum Company to provide them the opportunity, in accordance with the law, to implement the selected remedy. If National Gypsum Company accepts responsibility for site remediation, they may either pay for the remedial activities or conduct the work themselves with EPA oversight. If the company declines responsibility for site remediation, EPA will implement the remedy with Superfund monies and seek to recoup the expenses from the responsible parties through legal channels.

C. OTHER REMEDIAL ALTERNATIVES

1. Comment: A resident asked why EPA preferred the soil cover alternative over the asbestos removal alternative for site remediation.

EPA Response: Excavation and removal of the asbestos could create a potential public health threat by exposing the asbestos particles to the atmosphere. The soil cover alternative reduces the potential for future airborne release of asbestos particles. It also allows EPA to explore permanent treatment options that may be developed with innovative technologies.

2. Comment: A resident requested information on a remedial technology called vitrification.

EPA Response: Vitrification is a process in which the asbestos would be heated with electrodes to a temperature between 2,000 and 3,000 degrees Celsius which virtually melts the asbestos until it forms into a non-toxic glass-like substance. Vitrification has been used successfully on some hazardous materials, but has not yet been used on asbestos. Consequently, there is not enough data at this time to recommend vitrification as a viable remedial alternative.

D. MISCELLANEOUS

1. Comment: A local official asked for clarification on the status of the three satellite sites that are a part of the overall Asbestos Dump site.

EPA Response: The RI results for the three satellite sites have been forwarded to the U.S. Department of the Interior for review and comment. They will assist EPA in determining what additional field work is needed to assess any damage to natural wildlife or natural resources in the vicinity of the satellite sites.

2. **Comment:** A local official asked whether EPA would have a public meeting concerning the remedial alternatives for the satellite sites.

   EPA Response: EPA will have a public meeting for the satellite sites during which EPA will present the proposed remedial alternatives and EPA's preferred alternative. There will also be a public comment period to give the public an opportunity to discuss and comment on the alternatives prior to signing of a ROD.

3. **Comment:** A resident noted that the U.S. Army Corps of Engineers recently approved a flood plain program for the Passaic River Basin and the program includes the construction of a dam approximately 1,000 feet upstream of the site. The resident questioned whether the risks involved with a potential dam break had been factored into EPA's preferred alternative of soil cover, slope protection, and erosion and sediment control.

   EPA Response: EPA intends to exceed the design specifications for slope protection as much as possible. Accordingly, EPA will contact the Corps of Engineers during the design phase to determine the exact nature of their flood control program, to determine if the selected remedy will maintain its desired level of protection.

EPA's Response to Written Comments

COMMENT:
Tifa Ltd, the current property owner, requested that the "...USEPA modify the Proposed Remedial Action Plan (PRAP) and include in the Record of Decision a provision specifically to authorize Tifa to construct the proposed parking lot facility. In addition, Tifa requests that USEPA provide further that Tifa may construct the facility as soon as it wishes. This provision is necessary because Township approval of the proposal is due to expire in August, 1989, if not extended further."

EPA RESPONSE:
The purpose of the PRAP is to solicit public comment on EPA's preferred remedy to be implemented at the site; it is not a decision making document. Any modifications to the PRAP based upon public input are reflected in the Record of Decision (ROD). Accordingly, there is no need to modify the PRAP. In regard to the Tifa proposed parking lot, the EPA does not object to surficial uses of the property, providing it does not involve disruption or exposure of the asbestos waste. Approval of such use would be reviewed and approved by EPA, New Jersey Department of Environmental Protection (NJDEP) and appropriate local authorities on a case by-case basis prior to implementation. EPA reserves the right to determine whether such proposed action may be deemed an inconsistent response action under Section §122 (e)(6) of CERCLA.

COMMENT:
The Passaic River Coalition and a citizen recommended that the remedy should be designed and implemented in harmony with the natural surroundings of the Passaic River.

EPA RESPONSE:
EPA is sensitive to these concerns and will ensure such provisions are addressed in the remedial design.

COMMENT:
The Passaic River Coalition suggested that an independent agency other than National Gypsum, should perform sampling at the site.

EPA RESPONSE:
This question was addressed at the public meeting (see page 3 #5 of responsiveness summary). EPA maintains a high level of confidence in its field oversight and sample splitting program and will continue this approach during site remediation and long term monitoring.